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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,810	05/28/2004	Ramesh NAGARAJAN	119016	3809
27074	7590	07/31/2007		
OLIFF & BERRIDGE, PLC. P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER WASHINGTON, JAMARES	
			ART UNIT 2625	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction27074@oliff.com  
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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/709,810	NAGARAJAN ET AL.	
	Examiner	Art Unit	
	Jamare Washington	2625	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/28/2004</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 5-8, 11, 13, 14, 17, 18, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihisa Kagaya (US 5119471 A) in view of well known prior art.

Regarding claim 1, Kagaya discloses a device that processes electronic data (“...a control apparatus of a high speed/high quality printer capable of preventing a processing ability from being degraded even in a case where a modification processing...is performed” at column 2 line 34), comprising:

a processor that processes the electronic data (“...receiving processing means for providing such a processing that it is determined whether received character data is the character data which needs the modification processing” at column 2 line 45; Fig. 1 element P1);

a memory that stores the electronic data (“...the received character data is stored in the character data buffer prior to a printing processing” at column 2 line 50; Fig. 1 element 2);

an alteration circuit that alters the structure of the stored electronic data (Fig. 1 element P2 Modification Processing has to be performed by a circuit or set of computer implemented instructions); and

a controller that determines whether idle time exists after the electronic data is stored in the memory, and controls the alteration circuit to alter the electronic data when the controller determines that idle time exists (“... the modification processing is performed utilizing an idle time of the processing” at column 2 line 65. In order for the printer to process character data during idle time, the system must determine when idle time exists.).

Kagaya fails to teach a multifunctional device that processes electronic data.

However, multifunctional devices, such as all-in-one printer/scanner/copier devices, are well known in the art of image processing and the apparatus’ functionality would not teach against the printing apparatus as disclosed by Kagaya. (Official Notice)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a multifunctional device as known in the art in place of the printing device as disclosed by Kagaya because it would provide more versatility in the processing, transmission, and documenting of electronic data.

Regarding claim 2, Kagaya discloses the multifunctional device of claim 1, further comprising:

an input terminal that inputs data into the multifunctional device (“In the receiving processing P1, the data received from a host system is stored in the receiving buffer 1...” at column 3 line 56); and

an output terminal that outputs the electronic data from the multifunctional device (“The printing processing P4 controls on the basis of the thus read-out dot pattern data a print head control 7 and a space motor control 8, which in turn drive a print head and a space motor, not shown, of the present apparatus, respectively, to print a character represented by the dot pattern data on a recording sheet, not shown also...” at column 4 line 13).

Regarding claim 5, Kagaya discloses the multifunctional device of claim 1, the processor including a second processor that is controlled by the controller to process the electronic data prior to the electronic data being stored in the memory (Computer implemented method suggests another set of software instructions as the second processor, to carry out processing of electronic data prior to data being stored. “Receipt of data enables a receiving interruption to be operative so as to perform the receiving processing P1 (step S11)” at column 4 line 25), the processing including the alteration circuit altering the electronic data by compressing the electronic data (“...the modification processing is performed. As an example of such a modification processing, there is the processing of the enlargement, the italicization and so on...” at column 1 line 46. “It is possible to compress the thus italicized segment in the left and right directions” at column 2 line 5).

Regarding claim 6, Kagaya discloses the multifunctional device of claim 1, the processor including a third processor that is controlled by the controller to process the electronic data after the electronic data has been requested by an output terminal but prior to the electronic data being transmitted to the output terminal, the processing including the alteration circuit altering the

electronic data (Computer implemented method suggests an additional set of software instructions as the third processor, to carry out processing of electronic data after the data has been requested by an output terminal but prior to the electronic data being transmitted to the output terminal. "After the printing processing step S12 is terminated, for example, taking by time  $t_0$ , steps S2, S3 and S5 are immediately carried out using the idle time  $a_0$ , so that there is performed the modification processing P3 for the character data previously stored in the modification character buffer 2. That is, there is provided such a control that dot pattern data, which are to be next printed, are produced in the modification pattern memory 4, utilizing the total ( $a_0 + a_1 + \dots + a_{n-1} + a_n$ ) of the idle times when printing of dot pattern data in the image buffer 5 is performed" at column 5 line 33).

Regarding claim 7, Kagaya discloses the multifunctional device of claim 5, the controller including a second controller (Computer software implemented method providing alternate instructions from the controller to constitute a second controller) that controls the second processor and the alteration circuit to alter [the] electronic data ("...the modification processing is performed. As an example of such a modification processing, there is the processing of the enlargement, the italicization and so on..." at column 1 line 46. "It is possible to compress the thus italicized segment in the left and right directions" at column 2 line 5).

Regarding claim 8, discloses the multifunctional device of claim 6, the controller including a third controller (Computer software implemented method providing additional instructions from the controller to constitute a third controller) that controls the third processor

and the alteration circuit to alter to [the] electronic data (“After the printing processing step S12 is terminated, for example, taking by time  $t_0$ , steps S2, S3 and S5 are immediately carried out using the idle time  $a_0$ , so that there is performed the modification processing P3 for the character data previously stored in the modification character buffer 2. That is, there is provided such a control that dot pattern data, which are to be next printed, are produced in the modification pattern memory 4, utilizing the total  $(a_0 + a_1 + \dots + a_{n-1} + a_n)$  of the idle times when printing of dot pattern data in the image buffer 5 is performed” at column 5 line 33).

Regarding claim 13, Kagaya discloses a method of processing electronic data, comprising:

processing the electronic data (Fig. 1 P1 receiving processing);

storing the electronic data (Fig. 1 numeral 2 character data buffer); and

controlling the electronic data by determining whether idle time exists after the electronic data is stored (computer implemented system suggests control software determines idle time. Idle time is used for the “modification processing”, therefore it must be determined to be in existence for modification processing to commence during idle time.); and

altering the stored electronic data after determining that the idle time exists (Fig. 1 numeral P2 modification processing).

Regarding claim 14, Kagaya discloses the method of processing electronic data of claim 13, further comprising:



inputting an image that is converted into the electronic data (“In the receiving processing P1, the data received from a host system is stored in the receiving buffer 1” at column 3 line 56);  
and

outputting the electronic data to an output terminal (Fig. 1 output from P4 printing processing to numerals 7 and 8 print head control and space motor control, respectively).

Regarding claim 17, the Kagaya-Kimura combination discloses the method of processing electronic data of claim 15, further comprising:

controlling the electronic data to be processed prior to the electronic data being stored in the memory, the processing including the altering of the electronic data by compressing the electronic data (performed by the apparatus as rejected in claim 5 above).

Regarding claim 18, Kagaya discloses the method of processing electronic data of claim 13, further comprising:

controlling the electronic data to be processed after the electronic data has been requested by an output terminal, but prior to the electronic data being transmitted to the output terminal, the processing including the altering of the electronic data (performed by the apparatus as rejected in claim 6 above).

Regarding claim 22, Kagaya discloses a method of using a multifunctional device that includes a processor, a memory, a controller and an altering device (as rejected in claim 13 above), comprising:



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processing electronic data with the processor;  
storing the electronic data in the memory; and  
controlling the electronic data using the controller to determine whether a predetermined amount of idle time exists after the electronic data is stored; and  
altering the stored electronic data when it is determined that the predetermined amount of idle time exists (as rejected in claim 13 above).

*Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihisha Kagaya (US 5119471 A) and well known prior art as applied to claims 1 and 15 above, and further in view of Masatoshi Kimura (US 20040205146 A1).

Regarding claim 3, Kagaya discloses the multifunctional device of claim 1, the idle time being a duration of time that the electronic data remains in the memory without being processed (“...data stored in the modification character buffer 2 is read out from CG memory 3 and in turn subjected to the modification processing...thus processed data is stored in the modification

pattern memory 4. This modification processing P2 is carried out during an idle period of time in the printing processing” at column 3 line 64, Kagaya).

Kagaya fails to disclose the controller using a predetermined value to determine whether the idle time exists when the electronic data is stored in the memory.

Kimura teaches, in the same field of endeavor of information processing utilizing idle capacity, the controller using a predetermined value to determine whether the idle time exists when the electronic data is stored in the memory (“...the CPU 601a checks idle capacity data in the PC-side HDD 603 that is stored in a memory (not shown) in advance, and decides whether the idle capacity is in shortage” at paragraph [113]. “...sufficient idle capacity (equal to or more than a threshold value)” at paragraph [114], Kimura).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control apparatus as disclosed by Kagaya with the capability of determining whether (or how much) idle time exists as taught by Kimura because one would need to know if sufficient time is present to carry out the required processes.

Regarding claim 15, Kagaya discloses the method of processing electronic data of claim 13, further comprising:

determining whether the idle time exists using a predetermined value when the electronic data is stored (as performed by the apparatus as rejected in claim 3 above, Kagaya as modified by Kimura), the idle time being a duration of time that the electronic data is stored without being processed (definition of “idle time” in computing as explained in the rejection of claim 3 above).

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5. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagaya, well known prior art, and Kimura as applied to claim 3 and 15 above, and further in view of King-Sang Lam et al (US 6417014 B1).

Regarding claim 4, the Kagaya discloses the multifunctional device of claim 3 as rejected above, and the controller using the predetermined value to control the alteration circuit to automatically alter the electronic data when it determines that the idle time exists (“...the modification processing is performed utilizing an idle time of the processing” at column 2 line 65. Kagaya).

Kagaya does not teach the predetermined value being preset by a user.

However, Lam teaches, in the same field of endeavor of idle time processing, the predetermined value being preset by a user (“The automatic process controller 40 receives an idle time input...manually from an operator...” at column 4 line 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to input the amount of idle time manually as taught by Lam in the apparatus as disclosed by the Kagaya-Kimura combination where the idle time is used for altering image data to insure sufficient idle time is present for the given tasks. The user would be able to provide more or less idle time to the apparatus according to the enhancements needed.

Regarding claim 16, the Kagaya discloses the method of processing electronic data as rejected in claim 15, further comprising:

presetting the predetermined value, and using the predetermined value to automatically control the altering of the electronic data after it is determined that the idle time exists (performed by the apparatus as rejected in claim 4 above, Kagaya-Kimura combination as modified by Lam).

3. Claims 9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihisa Kagaya (US 5119471 A) and well known prior art as applied to claims 5 and 13 above, and further in view of Barry Appelman (US 6112250 A).

Regarding claim 9, Kagaya discloses the multifunctional device of claim 5, the alteration circuit that alters the structure of the electronic data after the electronic data has been stored in the memory (Fig. 1 element P2 Modification Processing has to be performed by a circuit or set of computer implemented instructions. Modification processing performed after data is stored in character data buffer as depicted in Fig. 5 step S3) during the idle time (“...the modification processing is performed utilizing an idle time of the processing” at column 2 line 65, Kagaya).

Kagaya does not disclose the alteration circuit including a compression circuit that recompresses the electronic data.

Appelman, in the same field of endeavor of manipulating electronic data to enhance data attributes, teaches a compression circuit that recompresses electronic data (Fig. 3 numeral 26 “recompressor. “The recompressor 26 re-compresses the decompressed data using any algorithm that provides a better compression ratio than the original compression” at column 3 line 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the modification processing circuit of the multifunctional device as disclosed by Kagaya with a compression circuit that recompresses electronic data as taught by Appelman to "provide a better compression ratio than the original compression" (column 2 line 56, Appelman).

Regarding claim 21, Kagaya discloses the method of processing electronic data of claim 13, further comprising:

altering the electronic data during the idle time to include one of at least reformatting the electronic data into a summary page and recompressing the electronic data after the electronic data is stored (performed by the apparatus as rejected in claim 9 above wherein the electronic data is recompressed with a better compression algorithm, Kagaya as modified by Appelman).

4. Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihisa Kagaya (US 5119471 A) and well known prior art as applied to claims 1 and 13 above, and further in view of Reiner Eschbach et al (US 7102792).

Regarding claim 10, Kagaya discloses the multifunctional device of claim 1.

Kagaya fails to disclose or suggest a circuit that alters one of at least sharpness, contrast, color and exposure of the electronic data.

Eschbach, in the same field of endeavor of modifying image data to affect a more pleasing appearance, teaches the above attributes as well known attributes of an image that

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enhance quality ("A pleasing image can be defined as an image having good color, good contrast, good sharpness and good exposure" at column 1 line 22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the alteration circuit as disclosed by Kagaya in the above multifunctional device with the capabilities of altering the well-known attributes of sharpness, color, contrast, and exposure as taught by Eschbach to afford a more pleasing output image.

Regarding claim 19, Kagaya discloses the method of processing electronic data of claim 13, further comprising:

altering the electronic data to include a change in one of at least sharpness, contrast, color and exposure of the electronic data (performed by the apparatus as rejected in claim 10 above, Kagaya as modified by Eschbach).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihisha Kagaya (US 5119471 A) and well known prior art, and further in view of The Kleper Report on Digital Publishing (Issue 5.4 July/August 2000).

Regarding claim 11, Kagaya discloses the multifunctional device of claim 1.

Kagaya does not disclose or suggest the alteration circuit operations are non-destructive and provide additional value and capability beyond the basic user requirements for a specified operation.

The Kleper Report, in the same field of endeavor of image processing using computer software, teaches operations which are nondestructive and provide additional value and capability beyond the basic user requirements for a specified operation (“Adobe Illustrator 9 new Styles palette which allows the user to save sets of appearance attributes that can be applied to any number of graphic objects or types... Styles are nondestructive, and permit the continued editing of the objects that they are linked to” at page 22 paragraph 4 under Adobe Illustrator 9, line 6. It is clear from the teachings of The Kleper Report that these “Styles” are optional, therefore suggesting additional value and capability which is not required).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the alteration circuit of the apparatus as disclosed by Kagaya to incorporate the teachings of The Kleper Report in which the alteration circuit operations are nondestructive and provide additional value and capability because one would always have access to the original electronic data in case of alteration/enhancement errors.

6. Claims 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagaya, well known prior art, and Eschbach as applied to claims 10 and 13 above, and further in view of Giovanni Giuffrida et al (US 20030028503 A1).

Regarding claim 12, the Kagaya discloses the multifunctional device of claim 10 as rejected above.

Kagaya does not disclose or suggest a circuit that extracts metadata from the electronic data.



Giuffrida, in the same field of endeavor of manipulation of electronic documents, teaches a circuit that extracts metadata from electronic data ("The second processing element is configured to receive substantially format-invariant data files, extract spatial layout facts, and provide the extracted spatial layout facts to a reasoning element. A database is configured to simultaneously provide spatial layout rules to the reasoning element; the spatial layout rules are used to extract the metadata from the substantially format-invariant data file" at paragraph [9], Giuffrida).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the circuit for extracting metadata from electronic data as taught by Giuffrida in the alteration circuit provided in the apparatus as disclosed by Kagaya to obtain information from the image of which processes would most likely enhance the image, thereby only altering the attributes of the image which would need the alterations.

Regarding claim 20, Kagaya discloses the method of processing electronic data of claim 13 further comprising:

extracting metadata from the electronic data (performed by the apparatus as rejected in claim 12 above, Kagaya as modified by Giuffrida).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamares Washington whose telephone number is (571) 270-1585. The examiner can normally be reached on Monday thru Friday: 7:30am-5:00pm.

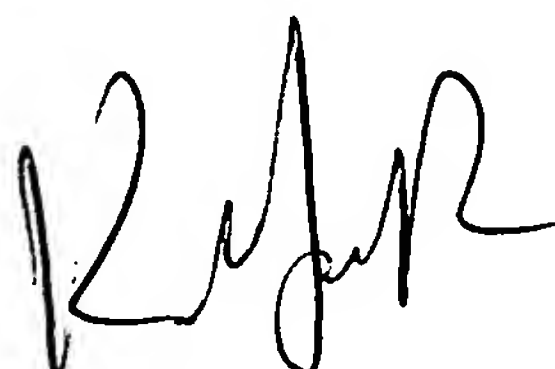
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on (571) 272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jamare Washington  
Junior Examiner  
Art Unit 2625

  
JW

July 20, 2007

  
KING Y. POON  
PRIMARY EXAMINER  
*Supervising Patent*